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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,130

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Alain Boudou

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EXAMINER

GIARDINO JR, MARK A

ART UNIT

PAPER NUMBER

2185

NOTIFICATION DATE

DELIVERY MODE

07/09/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/581,130	Applicant(s) BOUDOU ET AL.	
	Examiner MARK A. GIARDINO JR	Art Unit 2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Examiner acknowledges the applicant's submission of the amendment dated 3/14/2008. At this point claims 1, 5, 9, 12, and 13 have been amended and claim 2 has been cancelled. Thus, claims 1 and 2-13 are pending in the instant application.

The instant application having Application No. 10/581,130 has a total of 13 claims pending in the application; there are 2 independent claims and 11 dependent claims, all of which are ready for examination by the examiner.

Claim Rejections - 35 USC ' 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 5-7, 9, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen et al (US 6,154,819) in view of Appell et al (US 4,177,510).

Regarding Claim 1, Larsen teaches a method to control access to a sector of a flash type memory of an electronic module comprising:

receiving a write request to write data to an area of a partition wherein the partition is located within the sector (Larsen calls sectors as defined by applicant 'blocks', and data to be written is located within a block, see step 1002 in Figure 10 and

Column 11 Lines 23-27, where the “program” command corresponds to a write request); and

making a determination about whether an owner of the data to be written has write access to the partition of the sector (the rule corresponding to whether or not the block is locked, Figure 10 step 1008, and this rule involves checking the lock bit and signifying the ‘owner’ as an application allowed to erase the entire sector; in other words, if the application sees the block as unlocked the application is construed as an owner, Column 11 Lines 23-42); and

writing the data to the partition when the first determination and the second determination allow the write request to proceed (see Column 11 Lines 29-39, “if...it is determined that the memory block is not locked the program or erase operation is executed and the new data is written to the flash memory block”).

However, Larsen does not explicitly teach making a determination about whether the owner has permission to erase the entire sector in which the partition is located using a rule, where the rule verifies that the write request does not delete data of an owner other than the owner issuing the write request. Appell et al (US 4,177,510) teaches segregating a memory such that memory can only be written if it belongs to that particular process (“hardware checks determine that the address used by a process is part of the address space assigned to the process, and if the address is outside the level of privilege assigned, then access to addressed information is denied”, Column 6 Lines 61-68 in Appell).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to which the subject matter pertains to have implemented the process protection scheme of Appell in the device of Larsen to verify that the owner has permission to erase the entire block in which the partition is located (where the process in Appell is equivalent to an application in Larsen). Also, since each application would have its own address space outside of which it is not allowed to access memory, including Appell's protection scheme will ensure that a write request does not delete data of an owner (application) other than that of the owner that issued the request.

Combining the devices would be beneficial because adding Appell's protection helps "to protect information in segments shared by several processes from misuse" (abstract of Appell). Thus, by combining the devices, the additional benefit of a more protected system is obtained.

Regarding Claim 3, Larsen and Appell teach all limitations of Claim 1, wherein the owner is granted permission to erase the entire sector if at least one of the following conditions is satisfied: the entire sector belongs to the owner (since an owner sees the block as unlocked, the entire sector belongs to the same owner if the block's lock bit is not set, see Column 11 Lines 23-42), remaining partitions in the sector not belonging to the owner are blank, and the remaining partitions in the sector not belonging to the owner are marked as erasable.

Regarding Claim 5, Larsen teaches an electronic system comprising:

a FLASH type non-volatile memory comprising a sector, wherein the sector comprises a partition (Larsen calls sectors as defined by applicant 'blocks' and each bit

of data within this block may qualify as a partition, see description by Larsen of flash memory's block-erase architecture on Column 1 Lines 44-49);

a set of rules (Larsen's rule involves checking the lock bit, thus the 'owner' is an application allowed to erase the entire sector; in other words, if the application sees the block as unlocked it is an owner, see Column 11 Lines 23-42), a memory manager, operatively connected to the FLASH type non-volatile memory (a memory manager is inherently present to execute polling and comparison steps 1006 and 1008 in Figure 10) configured to:

receive a write request to write data to an area of the partition (step 1002 in Figure 10 and Column 11 Lines 23-26);

determine whether the owner of the data to be written has write access to the partition of the sector and permission to erase the entire sector using the set of rules (see Column 11 Lines 29-39, where permission is checked prior to writing the data), and

write the data to the partition when the determination allows the write request to proceed (see Column 11 Lines 29-39, "if...it is determined that the memory block is not locked the program or erase operation is executed and the new data is written to the flash memory block").

However, Larsen does not explicitly teach making a determination about whether the owner has permission to erase the entire sector in which the partition is located using a rule, where the rule verifies that the write request does not delete data of an owner other than the owner issuing the write request. Appell et al (US 4,177,510) teaches segregating a memory such that memory can only be written if it belongs to that

particular process ("hardware checks determine that the address used by a process is part of the address space assigned to the process, and if the address is outside the level of privilege assigned, then access to addressed information is denied", Column 6 Lines 61-68 in Appell).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to which the subject matter pertains to have implemented the process protection scheme of Appell in the device of Larsen to verify that the owner has permission to erase the entire block in which the partition is located (where the process in Appell is equivalent to an application in Larsen). Also, since each application would have its own address space outside of which it is not allowed to access memory, including Appell's protection scheme will ensure that a write request does not delete data of an owner (application) other than that of the owner that issued the request.

Combining the devices would be beneficial because adding Appell's protection helps "to protect information in segments shared by several processes from misuse" (abstract of Appell). Thus, by combining the devices, the additional benefit of a more protected system is obtained.

Regarding Claim 6, Larsen teaches all limitations of Claim 5, wherein the memory module intercepts all write requests to the FLASH type non-volatile memory (see steps 1004 and 1008 in Figure 10, where all write requests must go through the memory manager present to execute polling and comparison steps 1006 and 1008).

Regarding Claim 7, Larsen teaches all limitations of Claim 5, wherein the memory manager is configured to access a description of the partition, wherein the

description comprises the status of the partition (the partition is described by the locked bit; either the partition is locked or not locked as indicated in step 1008 of Figure 10).

Claim 9 is an electronic assembly including a computer program comprising program code instructions to execute the steps of the method according to Claim 1, and so is rejected on the same grounds as Claim 1.

Regarding Claim 10, Larsen teaches all limitations of Claim 5, with the further limitation exactly as described in Claim 3, and thus is rejected on the same grounds as Claim 3.

Claim 12 is the computer program of Claim 9 with the further limitation exactly as described in Claim 3, and thus is rejected on the same grounds as Claim 3.

Claims 4,11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen and Appell in view of See et al (US 6,401,160).

Regarding Claim 4, Larsen and Appell teach all limitations of Claim 1 as discussed above. However, Larsen teaches only two modes and applies these modes to the blocks exclusively (erasable or not blank, depending on the state of the block's lock bit). See teaches object headers describing each partition of each memory block that specifies the state of the corresponding object within each block, including an 'empty' status (see Status Table 320 and description of memory structure on Column 3 Lines 47-57 in See). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to which the subject matter pertains to have differentiated partitions within each block and assign them a status as described by See

because it would allow for a more liberal lock mechanism, as would have been obvious to one of ordinary skill in the art. For example, if the memory device lists a block as 'locked' as described by Larsen but all blocks within the partition are labeled 'empty', the writing application could still use these blocks due to the extra state. This situation may occur if an application overestimates the amount of memory blocks it needs and thus locks blocks that it does not need.

Regarding Claim 11, Larsen teaches all limitations of Claim 7, and since the only further limitation is the same as that of Claim 4, Claim 11 is rejected on the same grounds as Claim 4.

Regarding Claim 13, Larsen teaches all limitations of Claim 9, and since the only further limitation is the same as that of Claim 4, Claim 13 is rejected on the same grounds as Claim 4.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen and Appell in view of Toombs (US 7,177,975).

Regarding Claim 8, Larsen teaches all limitations of Claim 5, but does not teach these limitations on a card. However, Toombs teaches a card that contains a write protection system (Column 1 Lines 48-50 and Column 1 Lines 62-64 in Toombs). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to which the subject matter pertains to have implemented the write protection device described by Larsen on the card described by Toombs, since putting the device

on a card makes the system of claim 5 more mobile, which is more convenient for a user, as would have been obvious to one of ordinary skill in the art.

ARGUMENTS CONCERNING NON-PRIOR ART REJECTIONS/OBJECTIONS

Drawing Objections

Applicant's arguments/amendments with respect to the drawings have been considered and have overcome the Examiner's prior objections and thus are withdrawn.

Claim Objections

Applicant's arguments/amendments with respect to the claim objections of claim 5 has been considered and has overcome the Examiner's prior objection and thus is withdrawn.

Rejections - USC 101

Applicant's amendments with respect to Claims 1-4, 9, 12, and 13 have overcome the Examiner's prior rejections and thus are withdrawn.

ARGUMENTS CONCERNING PRIOR ART REJECTIONS

Rejections - USC 102/103

Applicant's argument with respect to claim 1 that Larsen does not make two determinations has been considered but is moot in view of the new grounds of rejection.

Applicant's argument with respect to claim 1 that Larsen does not contemplate determining whether the owner of the data to be written has sufficient access privileges

to write the data has been considered but is not persuasive. Larsen's rule involves checking the lock bit and the examiner has construed an 'owner' as an application allowed to erase the entire sector (Column 11 Lines 23-42 in Larsen for a description of the process); in other words, if the application sees the block as unlocked the application has been construed as an 'owner' of that block and thus has sufficient access privileges to write the data.

Applicant's argument with respect to claim 1 that Larsen does not make a determination on a sector basis where the partition is located within the sector has been considered but is moot in view of the new grounds of rejection.

CLOSING COMMENTS

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

STATUS OF CLAIMS IN THE APPLICATION

The following is a summary of the treatment and status of all claims in the application as recommended by **M.P.E.P. ' 707.07(i)**:

CLAIMS NO LONGER IN THE APPLICATION

Claim 2 was cancelled by the amendment dated 3/14/2008.

CLAIMS REJECTED IN THE APPLICATION

Per the instant office action, claims 1 and 3-13 have received a second action on the merits and are subject of a second action final.

DIRECTION OF FUTURE CORRESPONDENCES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Anthony Giardino whose telephone number is (571) 270-3565 and can normally be reached on Monday - Thursday 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Sanjiv Shah can be reached on (571) 272 - 4098. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 2185

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.A. Giardino

/M.G./

Patent Examiner
Art Unit 2185

July 7, 2008

/Sanjiv Shah/
Supervisory Patent Examiner, Art Unit 2185